UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,241	09/28/2001	Takuya Arimura	P21482	2540

7055	7590	04/29/2005		EXAMINER
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ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

		Application No.	Applicant(s)
Office Action Summary		09/926,241	ARIMURA, TAKUYA
		Examiner	Art Unit
		Hanh Nguyen	2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Application filed on 9/28/01*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-12* is/are rejected.

7)☒ Claim(s) *3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/18/01*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Drawings

Figure 6 should be designated by a legend such as --Prior Art-- because only that which is

old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR

1.121(d) are required in reply to the Office action to avoid abandonment of the application. The

replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR

1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted

by the examiner, the applicant will be notified and informed of any required corrective action in

the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 9 is objected to because of the following informalities: claim 9 is an independent

claim, but one of its limitation appears to depend on claim 6. In addition, it appears that "high

frequency signal processing section that filters at a predetermined frequency and demodulation to

a baseband signal" is not described in the drawing. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Sato (Pat. 5,982,763)in view of Higashi et al.(Pat. 5,692,015).

Regarding claims 1, 2, 4, 10 and 11, Sato discloses a CDMA system (a CDMA receiver,

see fig.6) comprising a plurality of electrically independent memory blocks (a first memory 401,

a second memory 406, see fig.6); wherein the first memory 401 periodically stores digital

reception signal S (see fig.6, col.8, lines 42-45) (temporaryly storing information symbols).

Second memory 406 stores a spread code C corresponding a pilot symbol PL (the second

memory block corresponding to respective code and slot) in said multi-code communication (

see col.8, lines 45-48); a timing control 405 controls the reception timing of pilot symbol and

digital signal in first memory (controling write access to one memory block) and controls to read

from first memory 401 repeatly by sliding the timing (control reading access of digital signal

from first memory 401 do not occur simultaneously, see col.8, lines 55-60). Sato further

discloses , in fig.10, a coherent detection section using pilot symbol 606 (carry out coherent

detection using a pilot symbol, see col.10, lines 30-35). Sato does not disclose each memory

block corresponding to a slot. Higashi et al. discloses a coherent detector disclosed in Fig.3

comprising a received signal memory 23. The signal memory 23 has a memory capacity equal to

or greater than two pilot signals (see col.5, lines 25-30). The two or more pilot signals imply that

there are more than two slots stored within the capacity of memory 2. Therefore, it would have

been obvious to one ordinary skilled in the art to configure the first memory and second memory

of Sato with respective slot and code as suggested by Higashi et al.in order to store received

digital signal corresponding a restive code and slot in a respect block of memory and determine

coherent.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (Pat.

5,982,763) in view of Higashi et al.(Pat. 5,692,015), and further in view of Harrison et al.

(Pat.6,028,887).

Regarding claim 6, as addressed in the rejection of claims 1, 2, 4, 10 and 11, Sato further

discloses a transfer function estimator 24 (phase estimation section) estimates transfer function

(carry out phase estimation) by using a reference pilot signal of known pattern fed from pilot

signal generator 25 and pilot signals contained in the received signal (using pilot symbols) (see

col.5, lines 32-40); an interpolator 26 (interpolation section, see fig.3) uses the estimated transfer

functions to estimate a transfer function at each symbol timing between pilot signals (determing

phase of information symbols based on the phase estimation, see col.5, lines 42-50). Neither

Higashi et al. nor Sato discloses a memory operation control section that controls the respective

operating modes of said plurality of memory blocks of said information symbol storage memory

based on multi-code information and slot information and sets memory blocks to which no

access is generated to a low power consumption mode.

Harrison et al. discloses a power efficient receiver comprising a controller 35 (a memory

operation control section) turns on the power of turner 21 to allow digital signal to be stored in

memory 33 and inactivate the power of turner thereafter (selectively control the operation of

memory block, see col.22, line 65 to col.23, line 5). Harrison further discloses in Abstract that

power inhibited to turner is to minimize power consumption (perform low power consumption

mode). Therefore, it would have been obvious to one ordinary skilled in the art to combine the

Harrison into the Sato and Higashi in order to set unwanted memory blocks to a low power

mode.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (Pat.

5,982,763) in view of Higashi et al.(Pat. 5,692,015), and further in view of Harrison et al.

(Pat.6,028,887), and further in view of Dabak et al. (Pat. 6,728,302 B1).

In claim 9, as addressed in the rejection of claims 1, 4, 10 and 11, Sato discloses a cdma

receiver (see fig.1) comprising an A/D converter 101 (A/D conversion section, fig.1); coherent

detection circuit 606 (coherent detection, fig.10); Higashi disclose despreader section that

despreads reception data (combination of interpolator 26, estimator 24, and compensator 28);

antenna 1 (see fig.2). Sato does not disclose a rake combiner and a codec section that carry out

channel decoding. Dabak et al. discloses , in Fig.7A, a rake combiner 712 (rake combiner) and a

decoder 714 (codec carry-out channel decoding). Therefore, it would have been obvious to one

skilled in the art to modify the Sato by applying the features taught by Higashi et al. and Dabak

et al. in order to detect coherent using pilot symbol.

In claims 5, 7 and 12, the limitations of these claims have been addressed in claim 6

above.

In claim 8, the limitation of this claim has been addressed in claims 1, 2, 4, 6, 10 and 11.

Allowable Subject Matter

Claim 3 is objected to as being dependent upon a rejected base claim, but would be

allowable if rewritten in independent form including all of the limitations of the base claim and

any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 3, the prior art does not disclose the memory interface section selectively

accesses a memory block corresponding to a slot subject to coherent detection and a memory

block corresponding to a slot currently being received.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Abeta et al. (Pat. 6,757,272 B1) discloses Channel estimation unit, and CDMA receiver

and CDMA transceiver with channel estination unit.

Schilling et al. (Pat. 6,078,576) discloses High processing gain CDMA/TDMA system

and method.

Neufeld (Pat. 6,278,703 B1) discloses Method and Apparatus for Improving neighbor

searching performance.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hanh Nguyen whose telephone number is 571 272 3092. The

examiner can normally be reached on Monday-Friday from 8AM to 5PM. The examiner can

also be reached on alternate

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou, can be reached on 571 272 3088. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HANH NGUYEN
PRIMARY EXAMINER